14. (Thrice amended) A method of diagnosing human cancer related to a gene having at least in part the following nucleotide sequence:

GTCTACATGGGTGCTTCCCATTCCAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTACACAGG
GACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAAATTACAGACTTCGGGCT
GGCTCGGCTGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGCAAGGTTAGGTGAAGGA
CCAAGGAGCGAGGAGGCTGGGTGGAGTGGTGTCTAGCCCATGGGAGAACTCTGAGTGGCCACCTC
CCCACAACACACAGTTGGAGGACTTCCTCTTCTGCCCTCCCAGGTGCCCATCAAGTGGATGGCGC
TGGAGTCCATTCTCCGCCGGCGGTTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGTGATGG
GGGGTGTTGGGAGGGGTGGGTGAGGAGCCATGG comprising:

detecting amplification rearrangement or over-expression of the gene by hybridizing nucleic acid derived from a tissue sample of a human suspected of having said cancer with [the] a DNA segment [of claim 12] comprising said sequence.

26. (Twice Amended) A method of evaluating human cancer in a patient comprising:

1) obtaining a tissue sample from the patient;

2) contacting the tissue sample with a DNA segment [of claim 12] comprising the following sequence:

GTCTACATGGGTGCTTCCCATTCCAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTACACAGG
GACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAAATTACAGACTTCGGGCT
GGCTCGGCTGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGCAAGGTTAGGTGAAGGA
CCAAGGAGCGAGGAGGCTGGGTGGAGTGGTGTCTAGCCCATGGGAGAACTCTGAGTGGCCACCTC
CCCACAACACACAGTTGGAGGACTTCCTCTTCTGCCCTCCCAGGTGCCCATCAAGTGGATGGCGC
TGGAGTCCATTCTCCGCCGGCGGTTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGTGATGG
GGGGTGTTGGGAGGGGTGGGTGAGGAGCCATGG to allow hybridization to occur; and

3) inspecting the tissue sample from step 2 for evidence of hybridization reaction.

40. (Amended) A method of diagnosing human cancer related to a gene having at least in part the following nucleotide sequence:

GTCTACATGGGTGCTTCCCATTCCAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTACACAGG
GACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAAATTACAGACTTCGGGCT
GGCTCGGCTGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGCAAGGTTAGGTGAAGGA
CCAAGGAGCGAGGAGGCTGGGTGGAGTGGTGTCTAGCCCATGGGAGAACTCTGAGTGGCCACCTC
CCCACAACACACAGTTGGAGGACTTCCTCTTCTGCCCTCCCAGGTGCCCATCAAGTGGATGGCGC
TGGAGTCCATTCTCCGCCGGCGGTTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGTGATGG
GGGGTGTTGGGAGGGGTGGGTGAGGAGCCATGG comprising:

detecting amplification rearrangement or over-expression of the gene by hybridizing nucleic acid derived from a tissue sample of a human suspected of having said cancer with [the DNA segment of claim 34] <u>a DNA segment encoding said gene, or allelic or species variation thereof</u>.

41. (Amended) A method of evaluating human cancer in a patient comprising:

1) obtaining a tissue sample from the patient;

2) contacting the tissue sample with a DNA segment [of claim 34] encoding a gene wherein said gene comprises the sequence:

GTCTACATGGGTGCTTCCCATTCCAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTACACAGG
GACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAAATTACAGACTTCGGGCT
GGCTCGGCTGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGCAAGGTTAGGTGAAGGA
CCAAGGAGCGAGGAGGCTGGGTGGAGTGGTGTCTAGCCCATGGGAGAACTCTGAGTGGCCACCTC
CCCACAACACACAGTTGGAGGACTTCCTCTTCTGCCCTCCCAGGTGCCCATCAAGTGGATGGCGC
TGGAGTCCATTCTCCGCCGGCGGTTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGTGATGG
GGGGTGTTGGGAGGGGTGGGTGAGGAGCCATGG, or allelic or species variation thereof to allow hybridization to occur; and

3) inspecting the tissue sample from step 2 for evidence of hybridization reaction.

Please add the following new claims.

--44. A method of diagnosing or evaluating human cancer in a patient comprising:

measuring the level of amplification or expression of a MAC117 gene in a sample from said patient; and

classifying those patients having an increased level of amplification or expression of said gene as being likely to suffer from cancer.

45. The method according to claim 44, wherein said gene comprises at least in part the following nucleotide sequence:

GTCTACATGGGTGCTTCCCATTCCAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTACACAGG
GACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAAATTACAGACTTCGGGCT
GGCTCGGCTGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGCAAGGTTAGGTGAAGGA
CCAAGGAGCGAGGAGGCTGGGTGGAGTGGTGTCTAGCCCATGGGAGAACTCTGAGTGGCCACCTC
CCCACAACACACAGTTGGAGGACTTCCTCTTCTGCCCTCCCAGGTGCCCATCAAGTGGATGGCGC
TGGAGTCCATTCTCCGCCGGCGGTTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGTGATGG
GGGGTGTTGGGAGGGGTGGGTGAGGAGCCATGG.

46. The method according to claim 44, wherein said gene comprises the following nucleotide sequence:

GTCTACATGGGTGCTTCCCATTCCAGGGGATGAGCTACCTGGAGGATGTGCGGCTCGTACACAGG
GACTTGGCCGCTCGGAACGTGCTGGTCAAGAGTCCCAACCATGTCAAAATTACAGACTTCGGGCT
GGCTCGGCTGCTGGACATTGACGAGACAGAGTACCATGCAGATGGGGGCAAGGTTAGGTGAAGGA
CCAAGGAGCGAGGAGGCTGGGTGGAGTGGTGTCTAGCCCATGGGAGAACTCTGAGTGGCCACCTC
CCCACAACACACAGTTGGAGGACTTCCTCTTCTGCCCTCCCAGGTGCCCATCAAGTGGATGGCGC
TGGAGTCCATTCTCCGCCGGCGGTTCACCCACCAGAGTGATGTGTGGAGTTATGGTGTGTGATGG
GGGGTGTTGGGAGGGGTGGGTGAGGAGCCATGG.

47. The method according to claim 44, wherein said cancer is breast cancer.

48. A method for screening patients to determine disease status, said method comprising:

measuring the level of amplification or expression of the MAC117 gene in a sample from a patient suffering from cancer.

49. A method as in claim 48, wherein gene amplification is measured directly by DNA analysis with a probe specific for the MAC117 gene.

50. A method as in claim 48, wherein gene expression is measured by determination of gene product.

51. A method as in claim 48, wherein gene expression is measured by determination of mRNA transcription.

52. A method as in claim 49, wherein the amplification of the MAC117 gene is determined indirectly by assay of a body fluid from a patient for increased levels of MAC117 expression.

53. A method as in claim 48, wherein said cancer is breast cancer.

54. A method for determining a prognosis in patients suffering from cancer, said method comprising:

determining the number of copies of the MAC117 gene in cells from a sample from a patient suffering from cancer.

55. A method as in claim 54, wherein the number of copies of the MAC117 gene is determined directly by Southern or dot blotting.

56. A method as in claim 54, wherein the expression of the MAC117 gene is determined by measuring the amount of the MAC117 mRNA transcripts or gene product, said expression corresponding to gene amplification.

57. A method as in claim 56, wherein the expression of the MAC117 gene is determined by measuring the amount of gene product by histochemical staining with labeled antibody specific for the gene product.

58. A method as in claim 54, wherein the number of copies of the MAC117 gene is determined indirectly by assay of a body fluid from a patient suffering from breast or ovarian adenocarcinoma for increased levels of MAC117 gene expression.

59. The method according to claim 54, wherein said cancer is breast cancer.